

**Claims:**

1. A symbiotic computing system comprising:

a plurality of symbiotic partners communicatively coupled with one another, each of the

plurality of symbiotic partners having a respective instance of a managed resource;

a symbiotic partner of the plurality of symbiotic partners receiving input affecting a respective instance of the managed resource;

the symbiotic partner producing actions based upon the input and transmitting the actions to each other of the symbiotic partners; and

each other of the symbiotic partners receiving the actions and using the actions to affect a respective instance of the managed resource to maintain coherency of the managed resource.

2. The symbiotic computing system of claim 1, wherein:

the managed resource comprises a data entity;

each of the symbiotic partners retains a respective instance of the data entity; and

alterations made to an instance of the data entity are made to each other instance of the data entity to maintain coherency.

3. The symbiotic computing system of claim 1, wherein alterations made to any

instance of the data entity are made to each other instance of the data entity to maintain coherency.

1 4. The symbiotic computing system of claim 1, wherein alterations made to a  
2 reference instance of the data entity are made to each other instance of the data entity to maintain  
3 coherency.

1 5. The symbiotic computing system of claim 1, wherein the data entity is selected  
2 from the group consisting of data files, data bases, configuration files and source files.

1 6. The symbiotic computing system of claim 1, wherein:  
2 the managed resource comprises a video image;  
3 each of the symbiotic partners maintains and displays an instance of the video image; and  
4 alterations made to one instance of the video image are made to each other instance of the video  
5 image to maintain coherency.

1 7. The symbiotic computing system of claim 1, wherein each instance of the  
2 managed resource is affected by the actions via an application program.

1 8. The symbiotic computing system of claim 1, wherein the symbiotic computer  
2 system resides within a client/server environment.

1 9. The symbiotic computing system of claim 8, wherein one of the symbiotic  
2 partners resides upon a server computer and one of the symbiotic partners resides upon a client  
3 computer.

10. The symbiotic computing system of claim 1, wherein the symbiotic computer system resides within an object oriented environment.

11. The symbiotic computing system of claim 10, wherein:  
the managed resource includes an object;  
a respective instance of the object resides on each of the symbiotic partners; and  
coherency is maintained between the instances of the object.

12. The symbiotic computing system of claim 11, wherein the objects include data objects.

13. The symbiotic computing system of claim 1, wherein at least some of the symbiotic partners operate symmetrically.

14. The symbiotic computing system of claim 1, wherein at least some of the symbiotic partners operate asymmetrically.

15. The symbiotic computing system of claim 1, wherein actions are buffered by at least one of the symbiotic partners.

16. The symbiotic computing system of claim 1, wherein actions affecting the managed resource are investigated to determine whether they are consistent.

1 17. The symbiotic computing system of claim 16, wherein upon determining that  
2 actions are inconsistent, some of the inconsistent actions are rejected.

1 18. The symbiotic computing system of claim 16, wherein actions are ordered in an  
2 attempt to determine whether they are inconsistent.

1 19. The symbiotic computing system of claim 16, wherein when it is determined that  
2 actions are inconsistent, multiple copies of the managed resource are created.

1 20. A method for performing symbiotic computing comprising:  
2 establishing a symbiotic relationship among a plurality of symbiotic partners, each of the  
3 plurality of symbiotic partners having a respective instance of a managed resource;  
4 at a symbiotic partner of the plurality of symbiotic partners, receiving input affecting a  
5 respective instance of the managed resource;  
6 producing actions based upon the input and transmitting the actions to each other of the  
7 symbiotic partners; and  
8 each other of the symbiotic partners receiving the actions and using the actions to affect a  
9 respective instance of the managed resource to maintain coherency of the managed resource.

1 21. The method of claim 20, wherein the managed resource comprises a data entity  
2 and further comprising:

3 each of the symbiotic partners retaining a respective instance of the data entity; and  
4 when alterations are made to an instance of the data entity, making alterations to each  
5 other instance of the data entity to maintain coherency.

1 22. The method of claim 20, further comprising, when alterations are made to any  
2 instance of the data entity, making alterations to each other instance of the data entity to maintain  
3 coherency.

1 23. The method of claim 20, further comprising, when alterations are made to a  
2 reference instance of the data entity, making alterations to each other instance of the data entity to  
3 maintain coherency.

1 24. The method of claim 20, wherein the data entity is selected from the group  
2 consisting of data files, data bases, configuration files and source files.

1 25. The method of claim 20, wherein the managed resource comprises a video image  
2 and further comprising:

3 each of the symbiotic partners maintaining and displaying an instance of the video image;  
4 and  
5 when alterations are made to one instance of the video image, making alterations to each  
6 other instance of the video image to maintain coherency.

1 26. The method of claim 20, wherein each instance of the managed resource is  
2 affected by the actions via an application program.

1 27. The method of claim 20, wherein the symbiotic computer system resides within a  
2 client/server environment.

1 28. The method of claim 27, wherein one of the symbiotic partners resides upon a  
2 server computer and one of the symbiotic partners resides upon a client computer.

1 29. The method of claim 20, wherein the symbiotic computer system resides within an  
2 object oriented environment.

1 30. The method of claim 20, wherein:  
2 the managed resource includes an object;  
3 a respective instance of the object resides on each of the symbiotic partners; and  
4 coherency is maintained between the instances of the object.

1 31. The method of claim 30, wherein the objects include data objects.

1 32. The method of claim 20, wherein at least some of the symbiotic partners operate  
2 symmetrically.

1 33. The method of claim 20, wherein at least some of the symbiotic partners operate  
2 asymmetrically.

1 34. The method of claim 20, wherein establishing a symbiotic relationship comprises:  
2 synchronizing each instance of the managed resource to an initial state; and  
3 apprising each symbiotic partner of operating conditions to be taken.

1 35. The method of claim 20, further comprising the step of initiating a recovery action  
2 when symbiotic operation fails.

1 36. The method of claim 20, wherein actions are buffered by at least one of the  
2 symbiotic partners.

1 37. The method of claim 20, wherein actions affecting the managed resource are  
2 investigated to determine whether they are consistent.

1 38. The method of claim 37, wherein upon determining that actions are inconsistent,  
2 some of the inconsistent actions are rejected.

1 39. The method of claim 37, wherein actions are ordered in an attempt to determine  
2 whether they are inconsistent.

1 40. The method of claim 37, wherein when it is determined that actions are  
2 inconsistent, multiple copies of the managed resource are created.

1 41. A data security system comprising:  
2 a plurality of symbiotic partners communicatively coupled with one another, each of the  
3 plurality of symbiotic partners having a respective instance of a secure resource;  
4 a symbiotic partner of the plurality of symbiotic partners receiving input affecting a  
5 respective instance of the secure resource;  
6 the symbiotic partner producing actions based upon the input and transmitting the actions  
7 to each other of the symbiotic partners; and  
8 each other of the symbiotic partners receiving the actions and using the actions to affect a  
9 respective instance of the secure resource to maintain coherency and security of the secure  
10 resource.

1 42. The data security system of claim 41, wherein:  
2 the secure resource comprises a data entity;  
3 each of the symbiotic partners retains a respective instance of the data entity;  
4 alterations made to an instance of the data entity are transmitted to each other of the  
5 symbiotic partners and made to each other instance of the data entity to maintain coherency.

1 43. The data security system of claim 41, wherein alterations made to any instance of  
2 the data entity are made to each other instance of the data entity to maintain coherency and to  
3 preserve security.

1 44. The data security system of claim 41, wherein alterations made to a reference  
2 instance of the data entity are made to each ~~other~~ instance of the data entity to maintain  
3 coherency.

1 45. The data security system of claim 41, wherein the data entity is selected from the  
2 group consisting of data files, data bases, configuration files and source files.

1 46. The data security system of claim 41, wherein actions are buffered by at least one  
2 of the symbiotic partners.

1 47. The data security system of claim 41, wherein actions affecting the secure  
2 resource are investigated to determine whether they are consistent.

1 48. The data security system of claim 47, wherein upon determining that actions are  
2 inconsistent, some of the inconsistent actions are rejected.

1 49. The data security system of claim 47, wherein actions are ordered in an attempt to  
2 determine whether they are inconsistent.

1 50. The data security system of claim 47, wherein when it is determined that actions  
2 are inconsistent, multiple copies of the secure resource are created.